

What is claimed is:

1. A system for supplying fluid to a pump, comprising:
a hydraulic pump including an inlet through which fluid enters the
pump;
5 a first source of fluid at relatively low pressure;
a second source of fluid at relatively high pressure velocity;
a first passage for hydraulically connecting the first fluid source and the
pump inlet;
a second passage hydraulically connecting the second fluid source and
10 the first passage, including a nozzle having a length and a cross sectional area that
decreases along the length in a direction toward the first passage, the nozzle
terminating at an exit opening, through which opening a jet of fluid exiting the nozzle
enters the first passage.
- 15 2. The system of claim 1, wherein the pump further includes an
outlet that is hydraulically connected to the second source.
3. The system of claim 1, wherein the first passage further includes
a throat located along a length of the first passage between the exit opening and the
20 inlet.
4. The system of claim 1, wherein the first passage further includes:
a throat located along a length of the first passage between the exit
opening and the inlet; and
25 a diffuser located along a length of the first passage between the throat
and the inlet.

5. The system of claim 1, wherein the pump is a positive displacement pump.

6. The system of claim 1, wherein the first passage further includes:
5 lateral walls spaced mutually across a width of the first passage, and wherein the nozzle and exit opening are located substantially equidistant from the lateral walls of the first passage.

7. The system of claim 1, wherein:
10 the first passage further includes lateral walls spaced mutually across a width of the first passage, and the nozzle exit opening is directed along the first passage toward the inlet.

8. The system of claim 1, wherein the nozzle exit opening is
15 directed toward a center of the throat.

9. An assembly for supplying fluid to a pump in an automatic transmission, comprising:
a source of fluid at relatively high pressure;
20 a hydraulic pump including an inlet through which fluid enters the pump;
a sump for containing fluid at relatively low pressure;
a control body including a line pressure control valve providing a source of fluid at relatively high pressure, and a first channel having a base, side walls and an
25 open top, the first channel hydraulically connecting the sump and the pump inlet;
a pump cover facing the control body, including a second channel hydraulically connecting the fluid source and the first channel, the second channel including a nozzle having a base, side walls, an open top, a length, and a cross

sectional area that decreases along the length in a direction toward the first channel;
and

a separator plate located between control body and the pump cover,
covering the open tops of the first channel and second channel, including an exit
5 opening located adjacent the nozzle, through which exit opening a jet of fluid exiting
the nozzle enters the first channel.

10 10. The assembly of claim 9, wherein the pump further includes an
outlet that is hydraulically connected to a control valve.

11. The assembly of claim 9, wherein the first passage further
includes a throat located along a length of the first channel between the exit opening
and the inlet.

15 12. The assembly of claim 9, wherein the first channel further
includes:

a throat located along a length of the first channel between the exit
opening and the inlet; and

a diffuser located along a length of the first channel between the throat
20 and the inlet.

13. The assembly of claim 9, wherein the pump is a positive
displacement pump having a drive rotor including lobes, a driven rotor including lobes
meshing with the lobes of the drive rotor, and an inlet located between the drive rotor
25 and driven rotor.

14. The assembly of claim 9, wherein the pump is a positive
displacement pump.

15. The assembly of claim 9, wherein the first channel further includes:

lateral walls spaced mutually across a width of the first channel, and wherein the nozzle and exit opening are located substantially equidistant from the lateral walls of the first channel.

16. The assembly of claim 10, wherein the first channel further includes:

lateral walls spaced mutually across a width of the first channel, and wherein an exit of the nozzle is directed along the first channel toward the inlet.

17. The assembly of claim 9, wherein the nozzle exit opening is directed toward a center of the throat.